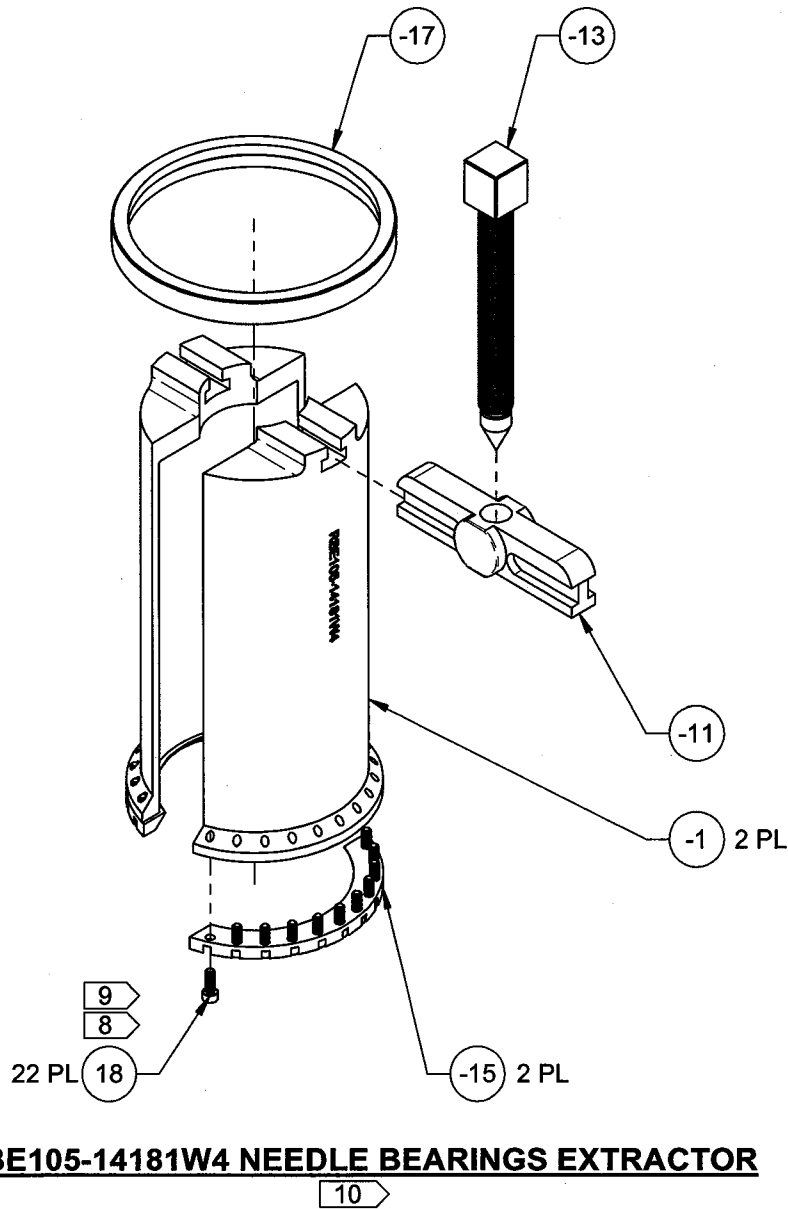
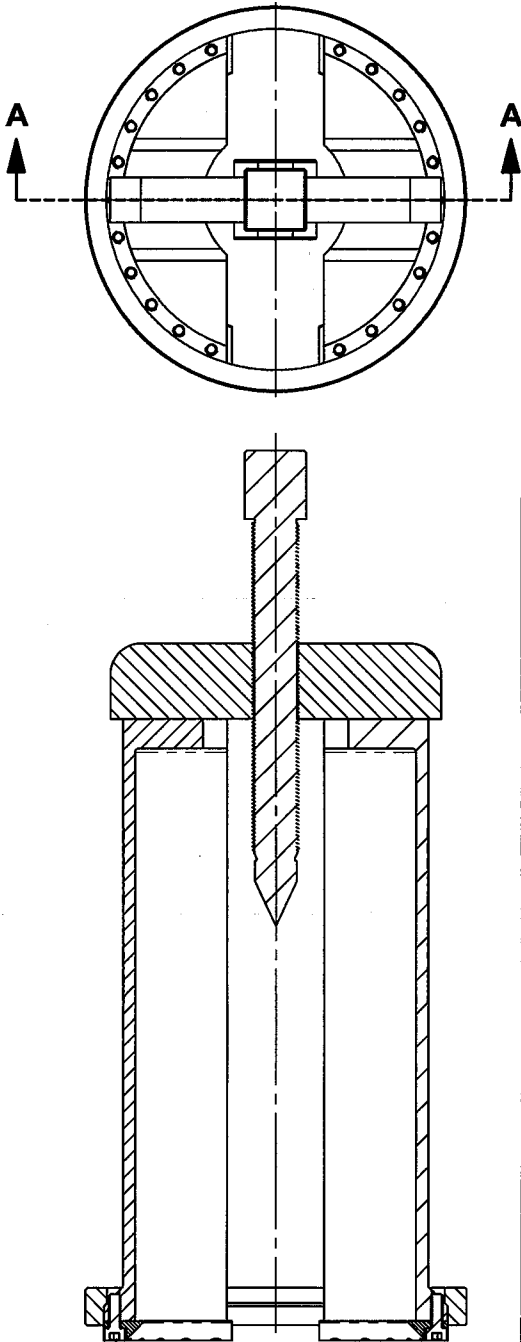


ITEM #	QTY	PART #	PART TITLE
-1	2	RBE105-14181W4-1	SHELL
-11	1	RBE105-14181W4-11	PULLER
-13	1	RBE105-14181W4-13	SCREW
-15	2	RBE105-14181W4-15	BASE
-17	1	RBE105-14181W4-17	CLAMPING RING
18	22	McMaster#91290A230 OR EQUIV	BLACK OXIDE STEEL SOCKET HEAD SCREW M5 X 0.8mm X 14mm LG.

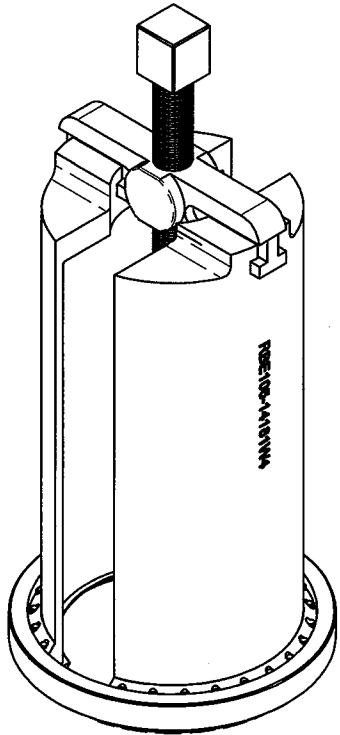


RBE105-14181W4 NEEDLE BEARINGS EXTRACTOR

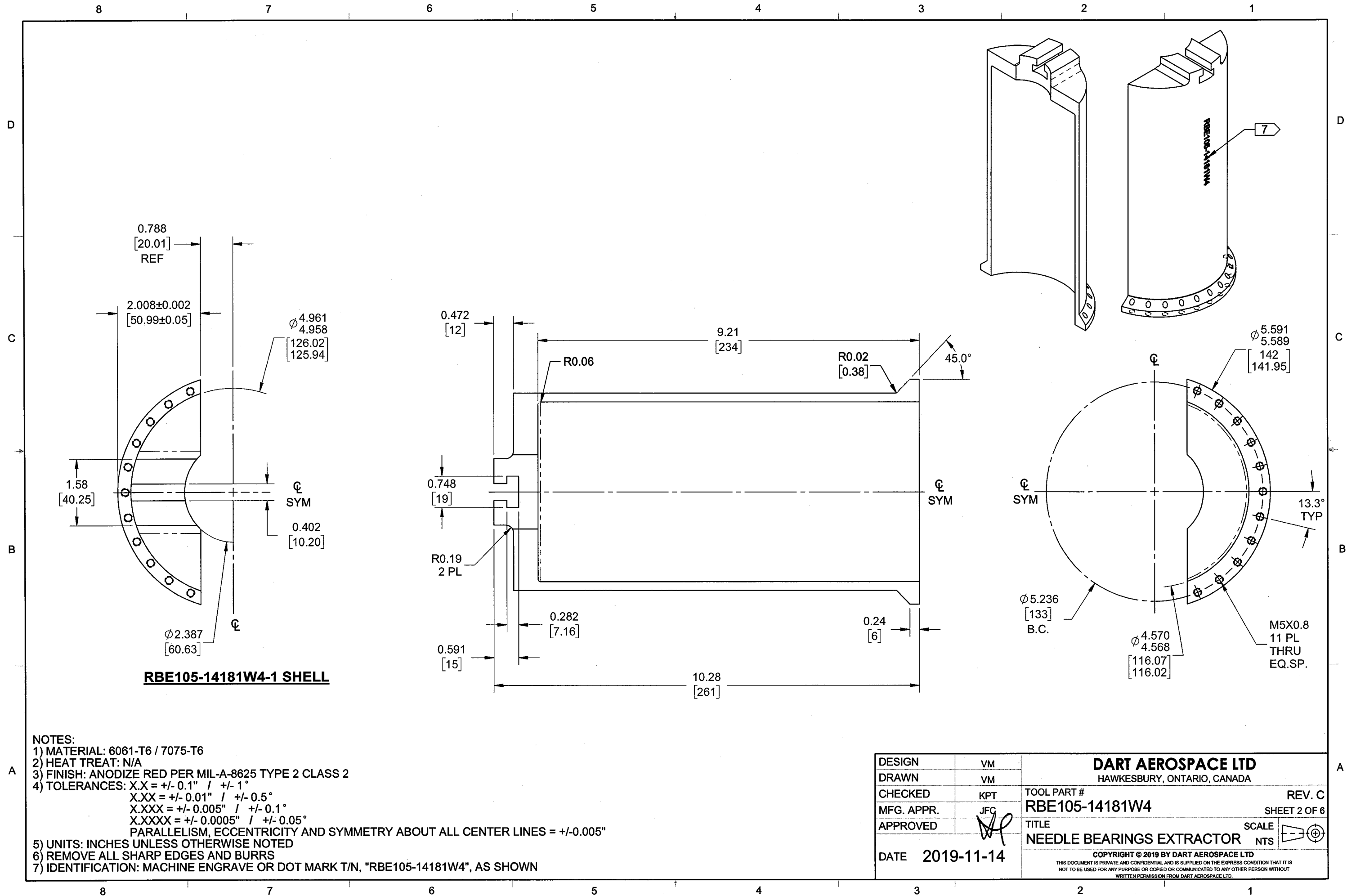
- NOTES:
- 1) MATERIAL: N/A
 - 2) HEAT TREAT: N/A
 - 3) FINISH: N/A
 - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) IDENTIFICATION: N/A
 - 7) ASSEMBLE AS SHOWN
 - 8) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEM 18 THEN ASSEMBLE WITH ITEM -1, AND REMOVE EXCESS
 - 9) INSTALL ITEM 18 HAND TIGHT
 - 10) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG



SECTION A-A



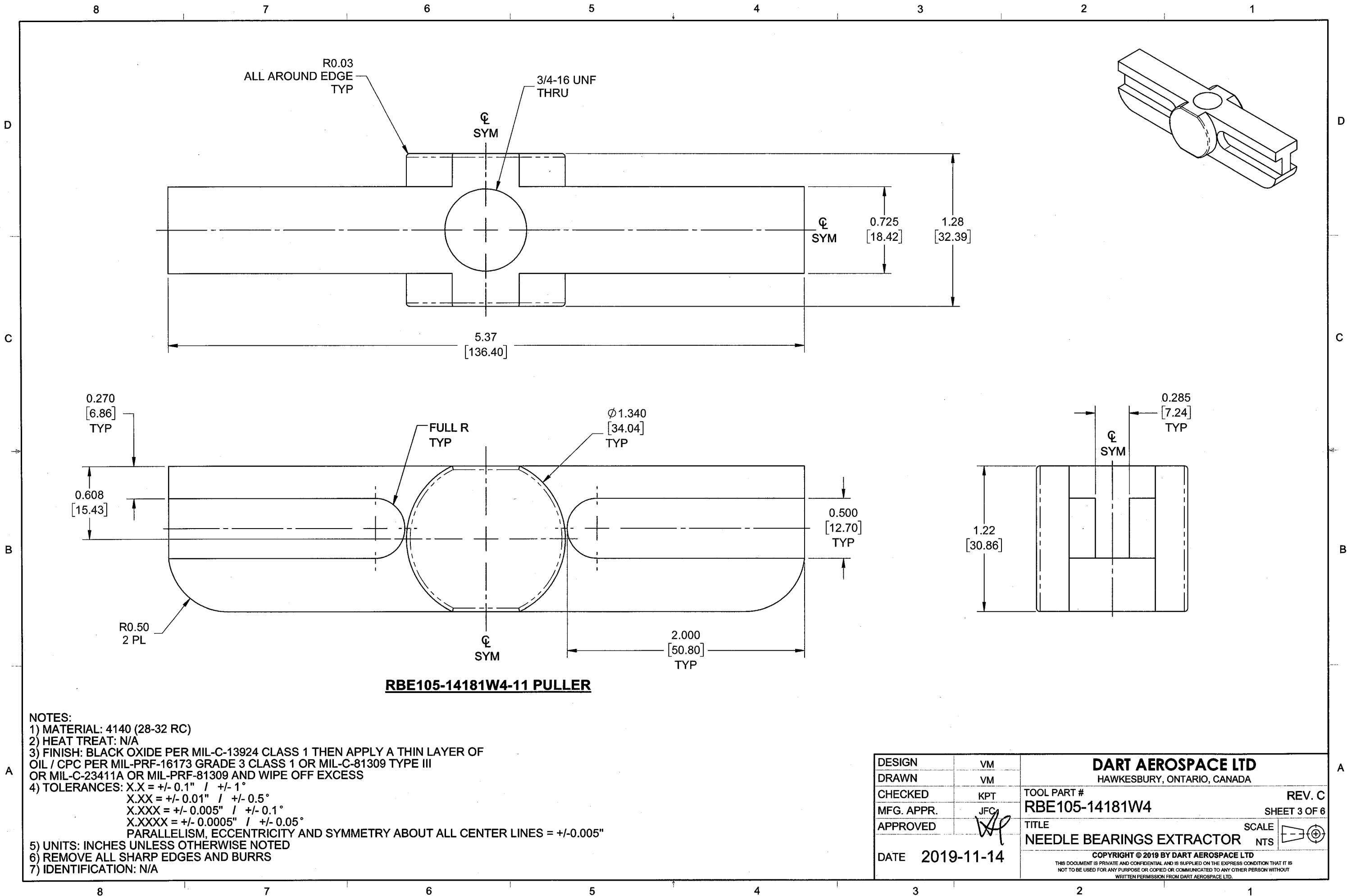
FOR OLDER REV's SEE PREVIOUS PDFs TEMPLATE UPDATED PER DART HBY STANDARDS ITEM -1 WAS 3 PARTS ASSY IS ITEM -1 SINGLE PART ITEM -3, -5 & -7 DELETED ITEM -19 McMaster#93070A125 QTY 18 CHANGED FOR ITEM 18 McMaster#91290A230 QTY 22 ITEM -9 ASSY DELETED ITEM -1 COMPLETE RE-DESIGN, FINISH CLEAR ANODIZE CHANGED FOR RED ANODIZE ITEM -11 DIMENSION 2X .725 +/-0.005 CHANGED FOR 0.725, DIMENSION 4X 2.00 CHANGED FOR 2.000 TYP, DIMENSION 4X .50 CHANGED FOR 0.500 TYP, DIMENSION 2X Ø 1.34 CHANGED FOR Ø 1.340 TYP, DIMENSION .285 +/-0.005 CHANGED FOR 0.285 TYP, DIMENSION 2.685 REMOVED, DIMENSION 2 X .275 REMOVED, DIMENSION 1.275 CHANGED FOR 1.28, MATERIAL 4140/4142 Q&T ZINC PLATE CHANGED FOR 4140 (28-32 RC) BLACK OXIDE, DIMENSION 0.608 ADDED ITEM -13 DIMENSION 1.0 CHANGED FOR 1.00, DIMENSION .325 CHANGED FOR .33, DIMENSION 5.25 AND 5.50 REMOVED, DIMENSION 6.55 ADDED, DIMENSION 1.1 REMOVED, MIN THREAD RELIEF ADDED, CENTER DRILL ADDED, MATERIAL 4140/4142 Q&T ZINC PLATE CHANGED FOR 4140 (28-32 RC) BLACK OXIDE ITEM -15 HEAT TREAT RC 45-50 CHANGED FOR 48-52 Rc, FINISH ZINC PLATE CHANGED FOR ZINC PLATE YELLOW, DIMENSION .32 CHANGED FOR 0.315, DIMENSION Ø5.100 B.C CHANGED FOR Ø5.236 B.C, DIMENSION 2.081 CHANGED FOR 2.087 +/-0.001, DIMENSION R2.145 REMOVED, DIMENSION R2.439 CHANGED FOR Ø4.902 +/-0.001, DIMENSION 8X 15° REMOVED, DIMENSION .561 REMOVED, DIMENSION 9X Ø.217 THRU ALL L L Ø.39 ±.20 CHANGED FOR Ø0.217 THRU L L Ø0.394 ±0.20 9 PL EQ.SP., DIMENSION .650 REMOVED, DIMENSION Ø5.590 CHANGED FOR Ø5.591/5.590 ITEM -17 MATERIAL 4140/4142 Q&T ZINC PLATE CHANGED FOR 4140 (28-32 RC) ZINC PLATE YELLOW, DIMENSION .30 CHANGED FOR 0.31, DIMENSION Ø5.595 CHANGED FOR Ø5.596/5.595, DIMENSION .60 CHANGED FOR 0.61, DIMENSION Ø5.510 CHANGED FOR Ø5.492		19-874	VM
REV.	DESCRIPTION	ECN #	BY
DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	JFC	RBE105-14181W4	SHEET 1 OF 6
APPROVED		TITLE	SCALE
DATE		NEEDLE BEARINGS EXTRACTOR	NTS
2019-11-14		<small>COPYRIGHT © 2019 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



NOTES:

- 1) MATERIAL: 6061-T6 / 7075-T6
- 2) HEAT TREAT: N/A
- 3) FINISH: ANODIZE RED PER MIL-A-8625 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: MACHINE ENGRAVE OR DOT MARK T/N, "RBE105-14181W4", AS SHOWN

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	JFC	RBE105-14181W4	SHEET 2 OF 6
APPROVED		TITLE	SCALE
		NEEDLE BEARINGS EXTRACTOR	NTS
DATE	2019-11-14	COPYRIGHT © 2019 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



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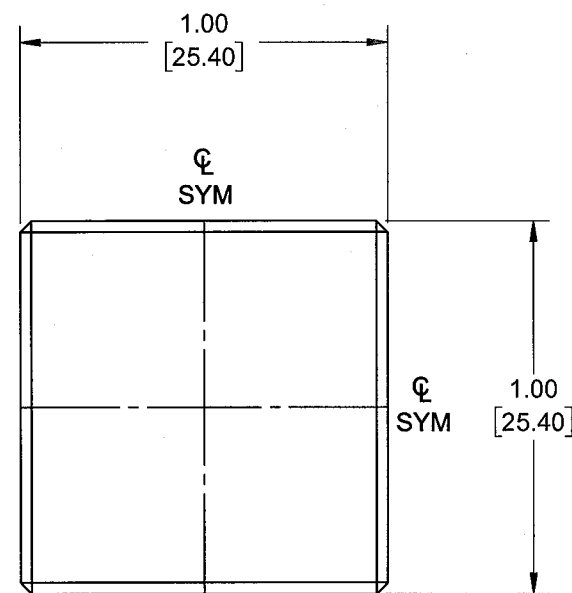
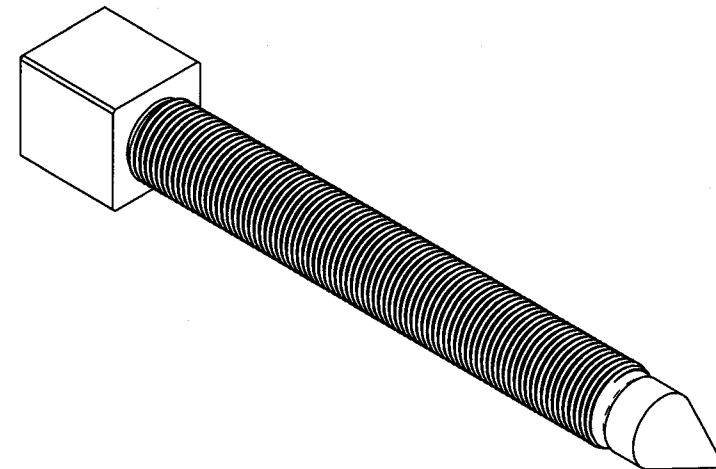
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A

**RBE105-14181W4-13 SCREW**

0.03 X 45.0° CMF
ALL AROUND EDGE
8 PL

8

CL
SYM

MIN
THREAD
RELIEF
2 PL

3/4"-16 UNF

Ø0.67
[17.12]

25.0°

SR 0.01

0.33
[8.26]

1.03
[26.26]

6.53
[165.96]

7.63
[193.90]

NOTES:

1) MATERIAL: 4140 (28-32 RC)

2) HEAT TREAT: N/A

3) FINISH: BLACK OXIDE PER MIL-C-13924 CLASS 1 THEN APPLY A THIN LAYER OF OIL / CPC PER MIL-PRF-16173 GRADE 3 CLASS 1 OR MIL-C-81309 TYPE III OR MIL-C-23411A OR MIL-PRF-81309 AND WIPE OFF EXCESS

4) TOLERANCES: X.X = +/- 0.1" / +/- 1°

X.XX = +/- 0.01" / +/- 0.5°

X.XXX = +/- 0.005" / +/- 0.1°

X.XXXX = +/- 0.0005" / +/- 0.05°



PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) REMOVE ALL SHARP EDGES AND BURRS

7) IDENTIFICATION: N/A

8) CENTER DRILL IS ACCEPTABLE

DESIGN	VM	DART AEROSPACE LTD	
DRAWN	VM	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	JFG	RBE105-14181W4	SHEET 4 OF 6
APPROVED		TITLE	SCALE
		NEEDLE BEARINGS EXTRACTOR	NTS 
DATE 2019-11-14		COPYRIGHT © 2019 BY DART AEROSPACE LTD	
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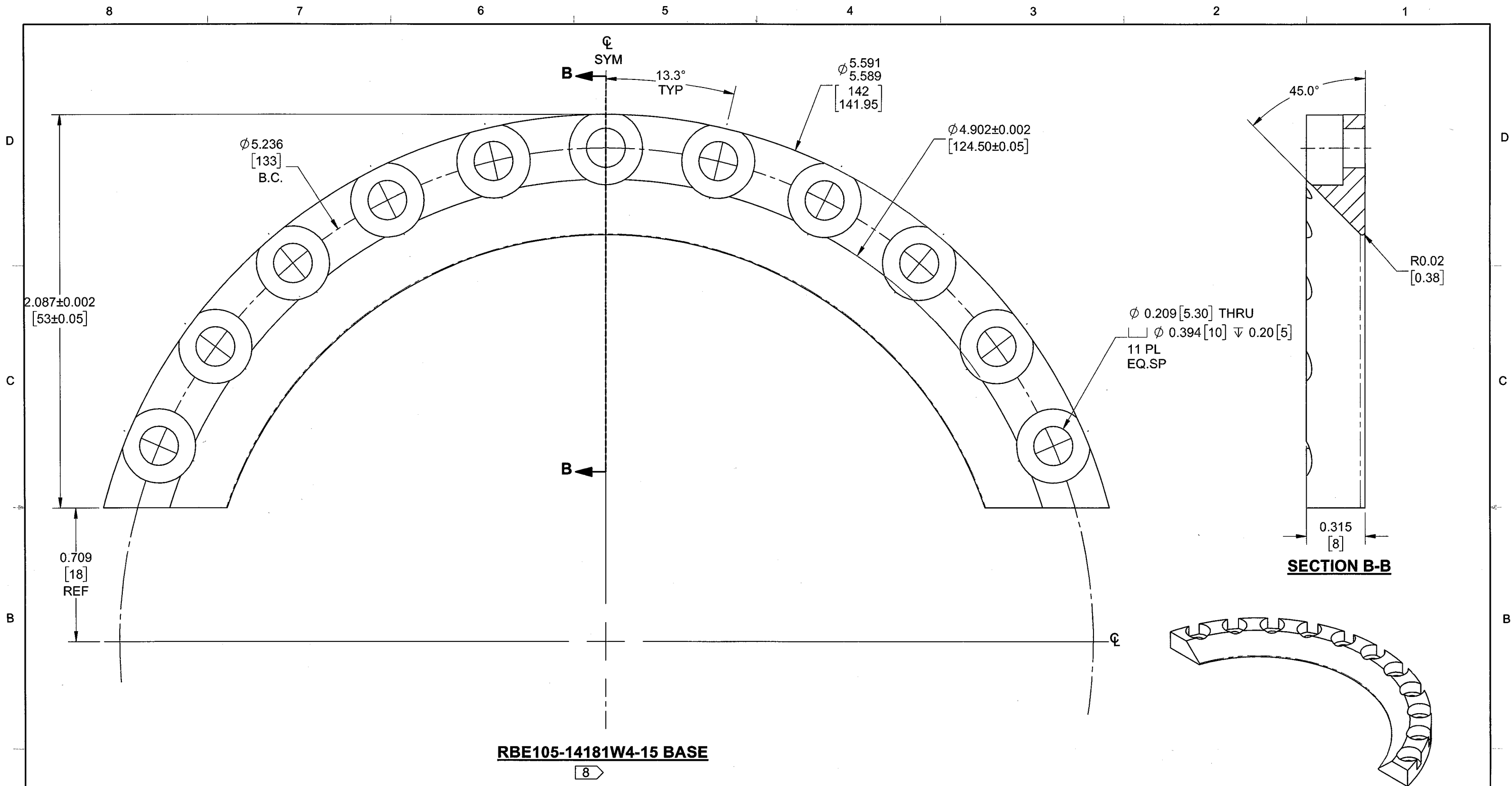
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- NOTES:
- 1) MATERIAL: O1
 - 2) HEAT TREAT: 48-52 Rc
 - 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
 - 4) TOLERANCES: X.X = $\pm 0.1"$ / $\pm 1^\circ$
X.XX = $\pm 0.01"$ / $\pm 0.5^\circ$
X.XXX = $\pm 0.005"$ / $\pm 0.1^\circ$
X.XXXX = $\pm 0.0005"$ / $\pm 0.05^\circ$
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = $\pm 0.005"$
 - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 6) REMOVE ALL SHARP EDGES AND BURRS
 - 7) IDENTIFICATION: N/A
 - 8) DIMENSIONS MUST BE MET AFTER PLATING

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	JFC	RBE105-14181W4	SHEET 5 OF 6
APPROVED		TITLE	SCALE
DATE 2019-11-14		NEEDLE BEARINGS EXTRACTOR	NTS
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8 7 6 5 4 3 2 1

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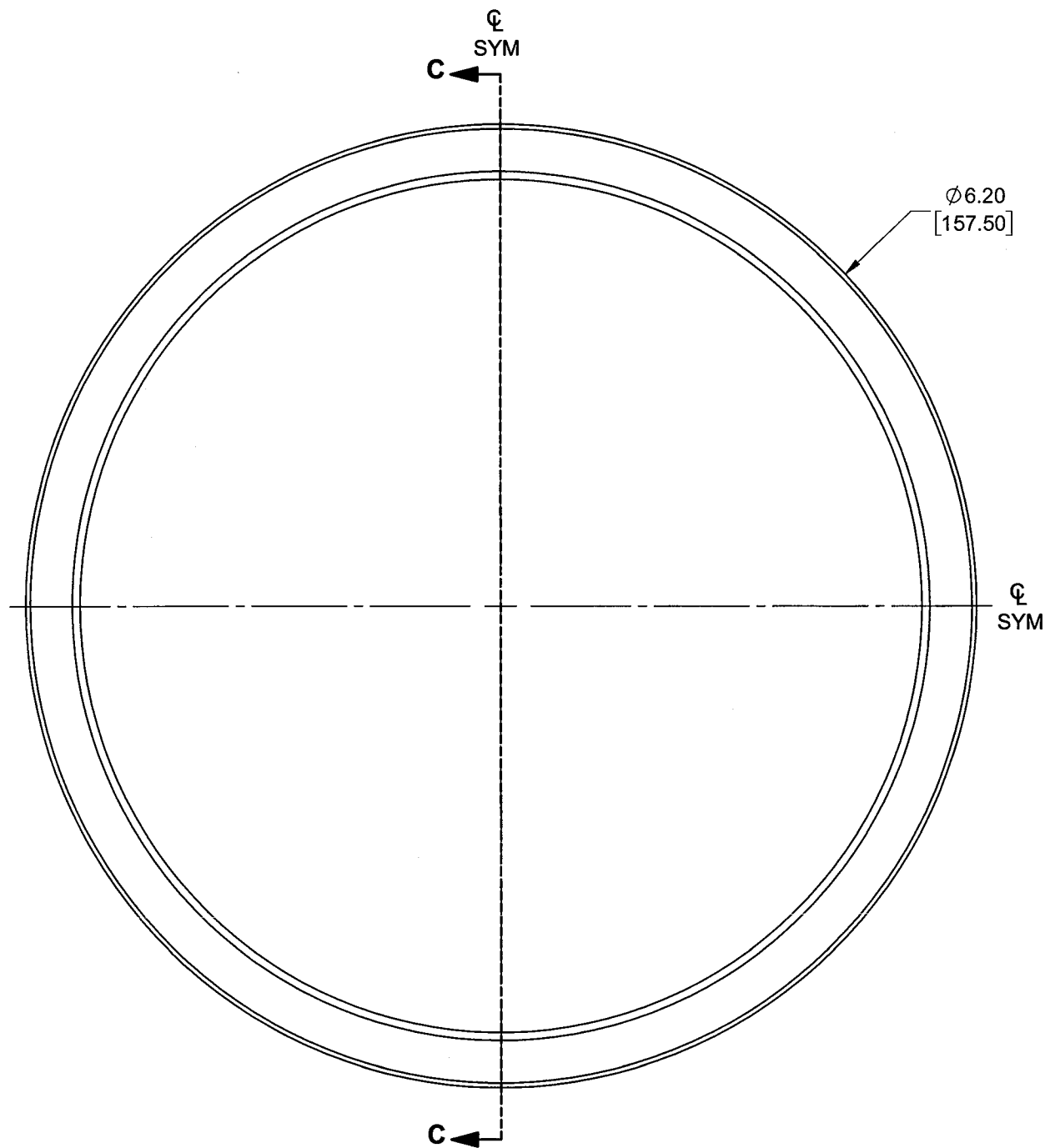
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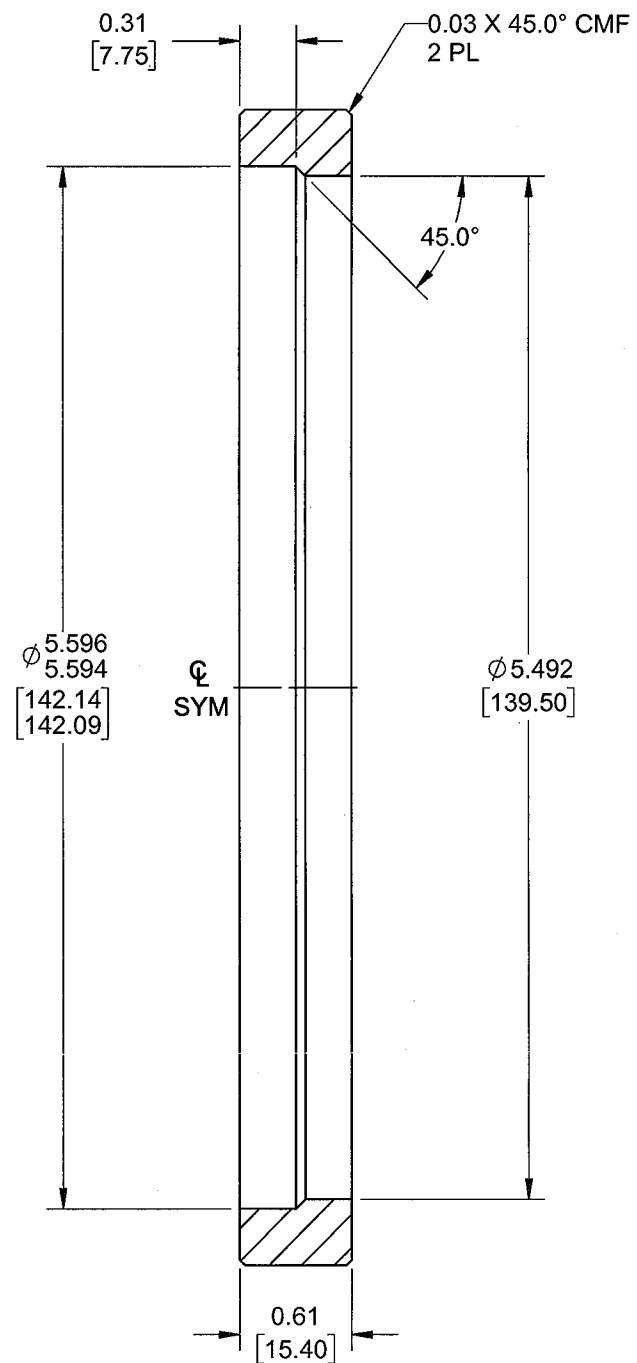
B

A

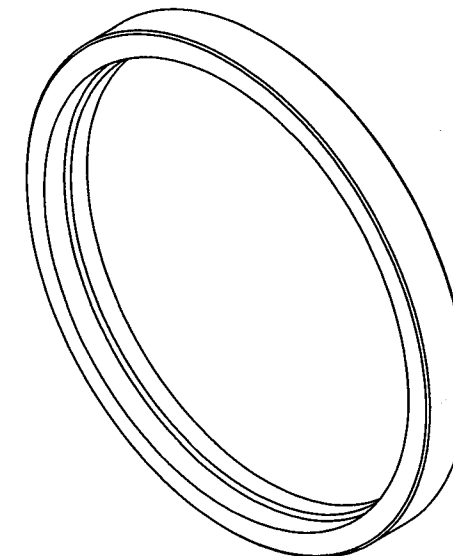


RBE105-14181W4-17 CLAMPING RING

8



SECTION C-C



NOTES:

- 1) MATERIAL: 4140 (28-32 RC)
- 2) HEAT TREAT: N/A
- 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°
X.XX = +/- 0.01" / +/- 0.5°
X.XXX = +/- 0.005" / +/- 0.1°
X.XXXX = +/- 0.0005" / +/- 0.05°
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES AND BURRS
- 7) IDENTIFICATION: N/A
- 8) DIMENSIONS MUST BE MET AFTER PLATING

DESIGN	VM	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	VM		
CHECKED	KPT	TOOL PART #	REV. C
MFG. APPR.	JFC	RBE105-14181W4	SHEET 6 OF 6
APPROVED		TITLE	SCALE
DATE	2019-11-14	NEEDLE BEARINGS EXTRACTOR	NTS
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